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October 6, 2011

ELECTRONIC FILING

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

**Re: *Ex Parte* Notification;
FCC File No. SAT-MOD-20101118-00239;
IB Docket No. 11-109**

Dear Ms. Dortch:

This is to inform you that on October 5, 2011, Martin Harriman, Douglas Smith, and Santanu Dutta all of LightSquared Subsidiary LLC ("LightSquared"), Dr. Javad Ashjaee, President and CEO of Javad GNSS, Inc., and the undersigned participated in a meeting and video conference regarding the above-captioned proceedings with Julius Knapp, Chief of the Office of Engineering and Technology and the FCC staff members identified in Attachment A.

The principal purpose of the meeting was to have Dr. Ashjaee discuss with the Commission staff the design of the Javad GNSS system that is compatible with LightSquared network transmissions on the lower 10 MHz of its complement of frequencies. Dr. Ashjaee pointed out that this new system will work with high-precision and timing GPS devices, including those already in use in the agriculture, surveying, construction and defense industries.

Dr. Ashjaee described a process of reconfiguring the filters and linear amplifiers of existing Javad GNSS receivers to make them compatible with LightSquared's lower 10 MHz. He said that it was a very simple and inexpensive process that will result in high precision and timing products for the federal government and commercial users that will provide outstanding performance at no significant increase in the price of the device. Dr. Ashjaee referred to the attached graphs in making his presentation (Attachment B).

Dr. Ashjaee noted that, with respect to the solution for timing applications, the Javad GNSS' technology dynamically compensates for group delay variations with the accuracy of better than 100 picoseconds and they are developing techniques to reduce this to better than 10 picoseconds.

Dr. Ashjaee said that Javad GNSS has completed the design and prototype phases of production and has made and tested preproduction units that will be available for public tests shortly.

Dr. Ashjaee then turned to the issue of retrofitting legacy high precision and timing devices. He said that the same filter configuration that he is using in his new, LightSquared-compatible product line could also be used to retrofit existing legacy devices with a simple change-out of the antenna and, in some cases, the LNA. He estimated that Javad GNSS could retrofit its existing receivers for a price of \$300 to \$800 depending on the model.

He noted that the same solution could apply to receivers made by other manufacturers. Dr. Ashjaee said that Javad GNSS would not only retrofit them to be LightSquared compatible, but also upgrade them to receive new GPS, GLONASS, and/or Galileo signals. He pointed out that all existing receivers that cannot track new GPS signals (L1C, L2C, L5) will be obsolete in about five years.

After Dr. Ashjaee's video conference concluded, the LightSquared representatives showed a new Partron ceramic filter and discussed its specifications, which are shown in Attachment C. The filter would reduce the LightSquared lower 10 MHz signal by some 50 dB with an insertion loss of about 1.7 dB maximum in the L1 passband and would cost only an estimated \$6.

The LightSquared representatives then turned to the topic of limiting power on the ground in the vicinity of LightSquared base stations and made the presentation set out in Attachment D.

Finally, the undersigned sent the e-mail set out in Attachment E to Rick Kaplan, Paul de Sa, Julius Knapp, Ronald Repasi, and Tom Peters.

Marlene H. Dortch
October 6, 2011
Page 3

Please do not hesitate to contact me with any questions.

Respectfully submitted,

A handwritten signature in black ink that reads "Henry Goldberg". The signature is written in a cursive style with a large, stylized "H" and "G".

Henry Goldberg
Counsel for LightSquared Subsidiary LLC

cc: Attachment A

Attachment A

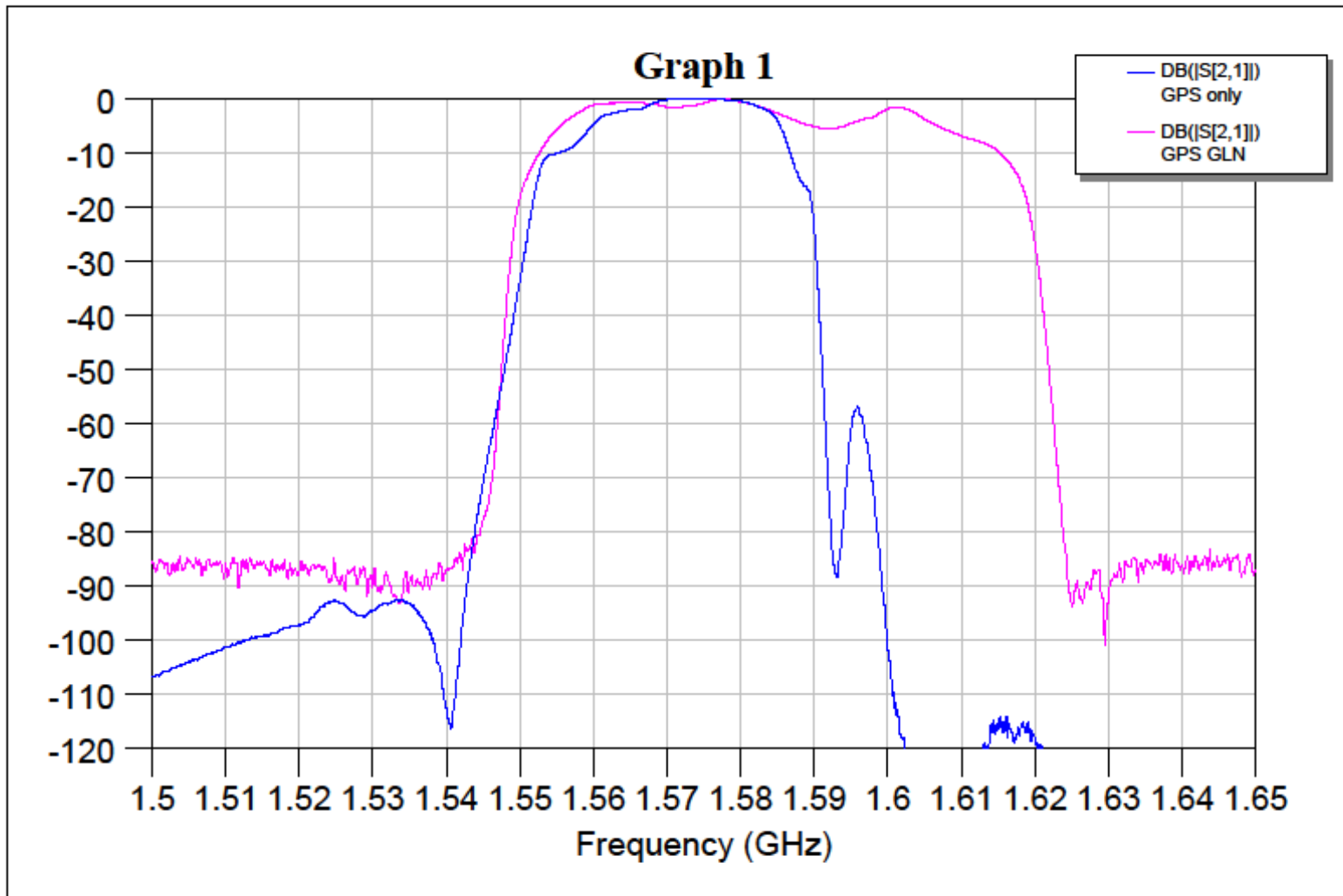
Brian Butler	OET
John Gabrysch	MB
Clifford Gonsalves	PSHSB
Brett Greenwalt	OET
Michael Ha	OET
John Kennedy	OET
Julius Knapp	OET
Jeremy Marcus	WTB
Paul Murray	WTB
Sankar Persaud	IB
Ron Repasi	OET
Mark Settle	OET
Darryl Smith	PSHSB

Attachment B

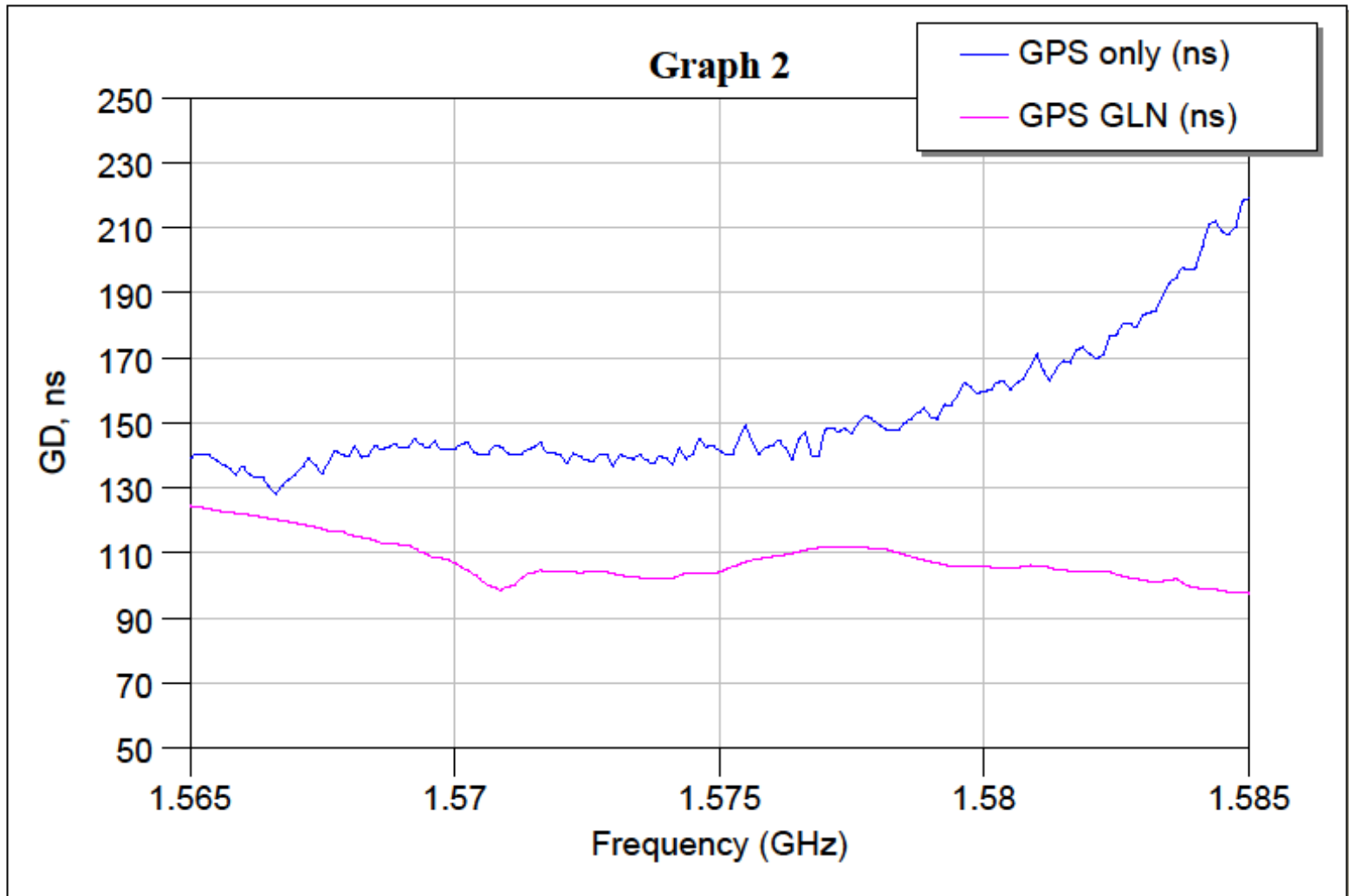
Javad Presentation to FCC

10/5/2011

Filter for GPS+GLONASS (red); GPS only (blue)

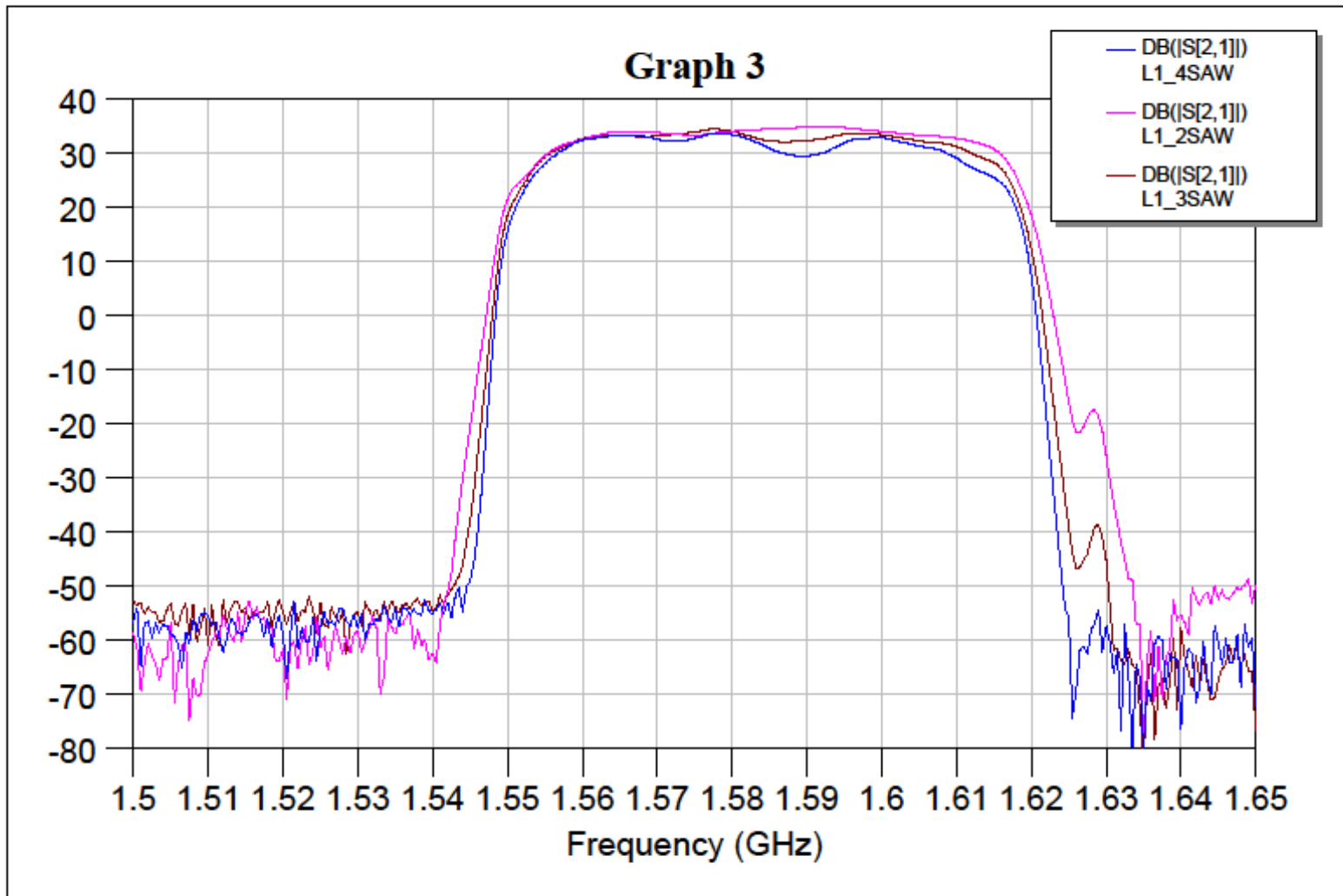


Filter Group Delay

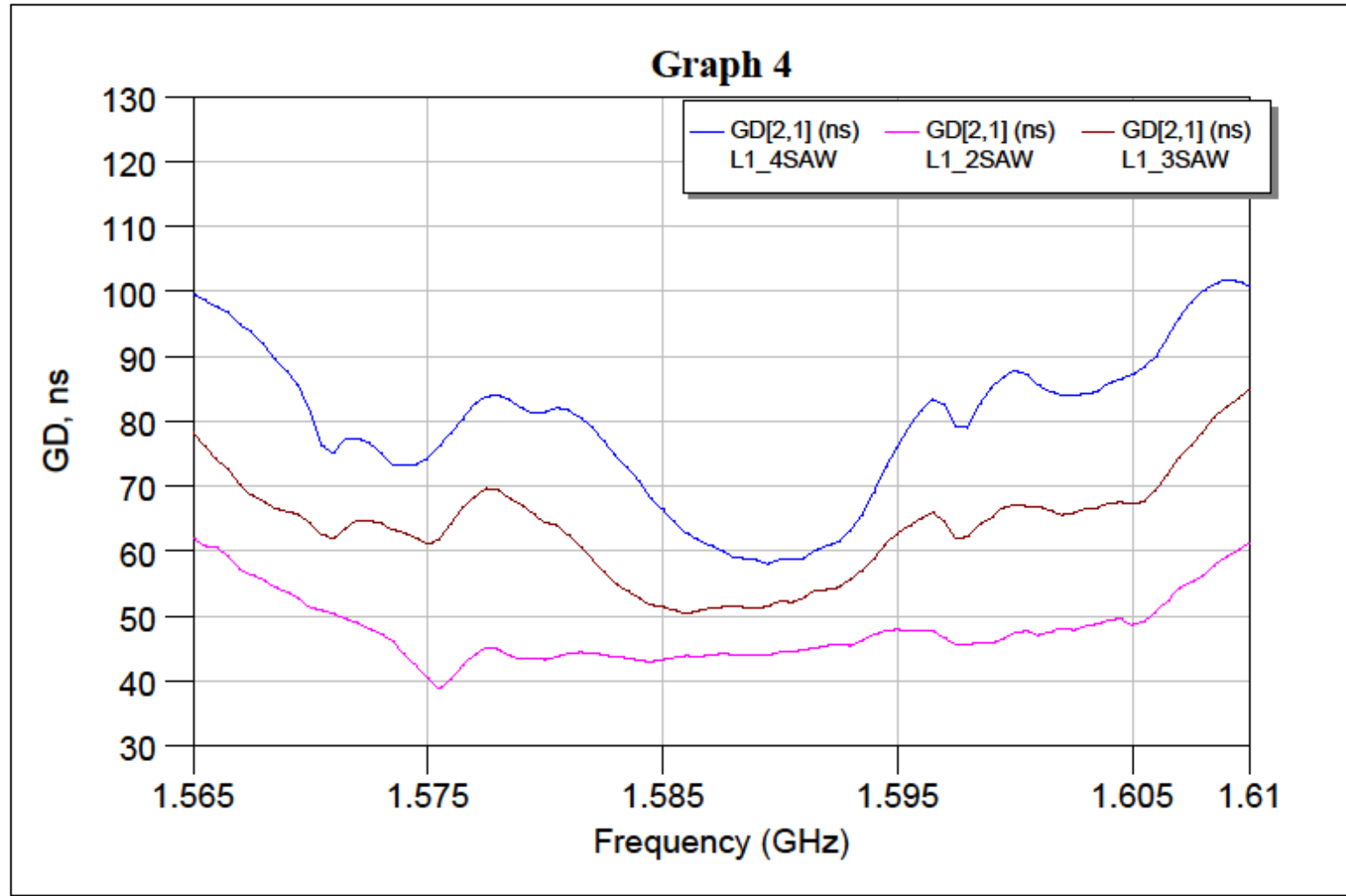


Filters for GPS+GLONASS

Ceramic filter + 2 SAW; + 3SAW; + 4 SAW



Group delays for filter of Graph 3



Attachment C

FMH1583HKA

SPEC	Insertion Loss		Ripple 1	Ripple 2	G.D.V 1	G.D.V 2	Return Loss	ATT	
	@1583 MHz	@1559~1607 MHz	@1559~1607 MHz	@1565.2~1585.6 MHz	@1559~1607 MHz	@1565.2~1585.6 MHz	@1559~1607 MHz	@1500~1536 MHz	@1627~1700 MHz
SPEC (@25°C)	1.8 dB max	3.0 dB max	1.5 dB max	0.4 dB max	25 nS max	10 nS max	14 dB min	45 dBc min	45 dBc min
EVB 1	1.55	2.42	0.89	0.30	14.10	6.00	17.50	60.80	48.80
EVB 2	1.45	2.41	1.00	0.33	14.50	6.10	17.60	60.40	48.00
1	1.53	2.65	1.08	0.27	13.60	5.00	18.60	57.70	48.00
2	1.52	2.52	1.02	0.23	16.50	5.01	18.60	56.20	49.00
3	1.65	2.62	1.05	0.33	14.30	5.70	17.90	61.60	48.10
4	1.63	2.51	1.03	0.36	18.00	7.30	18.70	61.50	48.50
5	1.57	2.84	1.23	0.35	17.10	6.40	20.70	54.70	50.60
6	1.52	2.64	1.12	0.31	14.20	5.30	20.60	55.10	48.90
7	1.51	2.70	1.12	0.28	15.90	5.20	21.30	57.60	49.60
8	1.60	2.54	0.93	0.28	14.60	5.30	19.30	63.70	47.30
9	1.43	2.51	1.06	0.27	14.30	5.10	19.80	58.90	47.80
10	1.66	2.80	1.16	0.33	14.90	5.90	16.50	64.20	48.40
AVERAGE	1.55	2.60	1.06	0.30	15.17	5.69	18.93	59.37	48.58
MAX	1.66	2.84	1.23	0.36	18.00	7.30	21.30	64.20	50.60
MIN	1.43	2.41	0.89	0.23	13.60	5.00	16.50	54.70	47.30
R	0.23	0.43	0.34	0.13	4.40	2.30	4.80	9.50	3.30

Attachment D



Presentation to FCC
October 5, 2011

Limiting Power on the Ground



Overview of Limiting Power on the Ground

- ▶ LightSquared's Proposal to Limit ATC Base Station Power on the Ground
- ▶ Implementation
 - Option 1: Using standard propagation tools and drive testing (mobile and static)
 - Option 2: Reducing EIRP based on a Table of BTS Antenna Height versus Maximum EIRP

LightSquared Commitment

- ▶ Limit the Power on the ground
 - Sites will be deployed to result in no more than -30 dBm at points on the ground
 - -27 dBm after January 1, 2015
 - -24 dBm after January 1, 2017

- ▶ TWG Tests show, in the presence of a -30dBm LightSquared lower 10 MHz signal:
 - All cellular and general location and navigation devices performed well
 - All narrowband timing devices performed well
 - Many high-precision devices that do not use an MSS signal for augmentation performed well

Option 1: Using standard propagation tools and drive testing to manage on the ground power levels

- ▶ Network design will be based on industry standard propagation tools that have been “tuned” for the local market
- ▶ After deployment before commercial operations, extensive drive testing will be performed followed by static testing of “hot spots”
- ▶ LightSquared will take immediate corrective action if it is determined that these power level commitments are exceeded, when measured as per the conditions below; such actions might include reducing power or modifying antenna downtilt.

Option 2: Reducing EIRP based on BTS Antenna Height to meet -30 dBm on the ground power levels

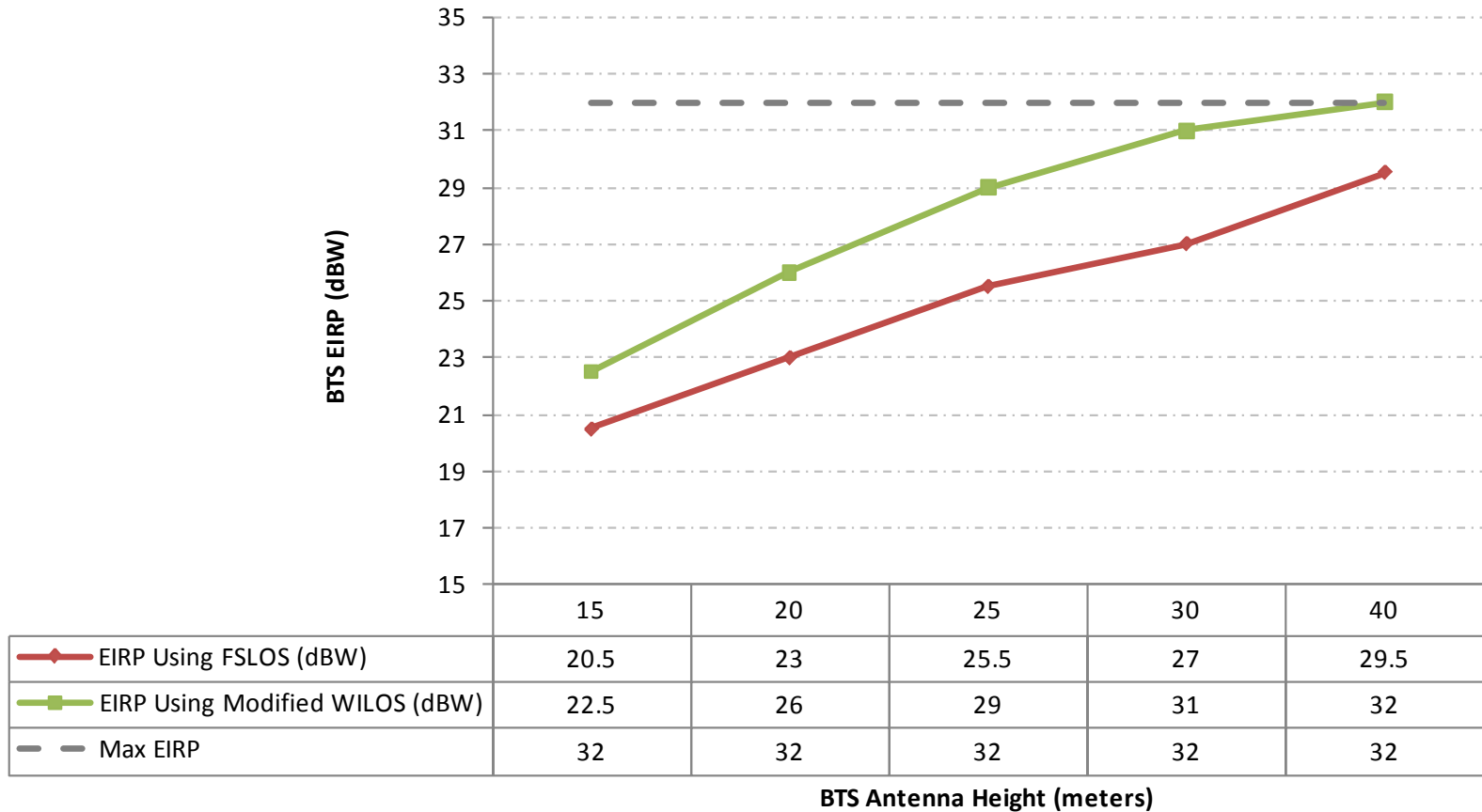
BTS Antenna Height (m)	EIRP Reduction (dB)	EIRP (dBW)
> 30	0	32
27-30	1	31
25-27	2	30
23-25	3	29
21-23	4	28
19-21	5	27
17-19	6	26
16-17	7	25
15-16	8	24
14-15	9	23
0-14	10	22

► **EIRP to increase 3 dB on 1/1/2015 and 1/1/2017 but not exceed 32 dBW**

► **Using ARGUS HPX308R Antenna with 2 degrees EDT and Modified WI-LOS (FSLOS for 1st 50 meters and WI-LOS beyond 50 meters)**

Using Free Space To Model Propagation Beyond 50m and up to 600m Would Require Drastic Power Reduction

EIRP (Required to meet -30 dBm Rx Level) Based on BTS Antenna Height



Way Forward

- ▶ Option 1: recognize the validity of drive tests and static tests to provide reliable empirical data or
- ▶ Option 2: develop a consensus model of EIRP and antenna height that uses a more realistic model than free space for propagation up to 500 m

Attachment E

From: Henry Goldberg
Sent: Wednesday, October 05, 2011 7:52 AM
To: 'julius.knapp@fcc.gov'
Cc: Repasi Ronald (Ronald.Repasi@fcc.gov); Paul de Sa (Paul.deSa@fcc.gov); Rick Kaplan (rick.kaplan@fcc.gov); 'tom.peters@fcc.gov'
Subject: Javad

Aviation International News

Javad GPS May Save LightSquared's Bacon

AINALERTS » OCTOBER 4, 2011

by **ANDREW WOOD**

October 4, 2011, 3:32 PM

Can GPS and LightSquared coexist? Within the civil and military GPS community, the answer has been emphatically and unequivocally, “No.” Until last week, that is. Attendees at the annual convention of the U.S. Institute of Navigation held in Portland, Ore., had been confident that the laws of physics made coexistence of the two impossible. So the [announcement during the convention by LightSquared that, to solve the problem, it had teamed with Javad Inc.](#)—a developer of precision GPS receivers—was met with both surprise and skepticism. Javad founder Javad Ashjaee, known as an outside-the-box innovator, is understood to have already developed proof-of-concept precision GPS prototypes that are unaffected by LightSquared’s 4G broadband transmissions. Further, production units are forecast to come out next year with estimated upgrade costs of \$300 to \$400 each. Since Javad has surprised the GPS industry before, most of those who previously criticized LightSquared’s plans due to GPS interference are reserving judgment until more details are forthcoming. However, the Coalition to Save Our GPS said that if the solution does indeed work, LightSquared should be required to foot the bill for the upgrades.